DOCUMENT RESUME

ED 024 263 EM 006 843

By- Starlin, Glen

Inter-Institutional Communications Networks.

Pub Date Nov 66

Note- 18p.; Paper prepared for The Feasibility Study of Inter-Institutional Television, University of Minnesota, Minneapolis.

EDRS Price MF-$0.25 HC-$1.00

Descriptors- College Cooperation, Communication Satellites, Educational Innovation, *Educational Television, Facility Expansion, Information Processing, Institutional Facilities, Instructional Television, *Intercommunication, *Interinstitutional Cooperation, *Networks, Programed Instruction, State Colleges, *State Programs, State Universities, Televised Instruction, Video Tape Recordings

Can and should television broadcasts and distribution services act as links between institutions of higher education? Educational broadcasting in general has grown slowly since National Educational Television (NET) initiated "network" service in 1954, but now other groups are experimenting in telecommunications interconnection and the supplementation of existing ETV service. More than half the states are operating or have plans for ETV network activity with no common purpose except to extend educational and cultural offerings to students and the general public. On a regional level, various organizations are conducting studies in information processing, instructional television, and programed instruction. Television connection between educational institutions can aid the exchange of courses, faculty talent, and research facilities. A review of inter-institutional television use in Oregon, Texas, and Florida indicates that the distribution of video tape recordings and the use of open and closed-circuit transmission meet with resistance from institutional prestige, faculty pride, and general apathy. Educational systems that desire to introduce inter-institutional communication systems should attempt a clear definition of objectives and commit themselves to appropriate facility and staff development. (TI)

ED0 24263

Inter-Institutional Communications Networks

Glen Starlin
University of Oregon
Eugene, Oregon

Prepared for the Feasibility Study of Inter-Institutional Television • University of Minnesota, Minneapolis, Minnesota

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Inter-Institutional Communications Networks

Prepared for The Feasibility Study
of Inter-Institutional Television
University of Minnesota
Minneapolis, Minnesota

EM 006843

Glen Starlin
University of Oregon
Eugene, Oregon
November 1966

The purpose of this paper is to outline the nature and extent of telecommunications interconnection which could be, or is being utilized by institutions of higher education. It will deal first with educational television network development, and with special methods of distributing and extending ETV services, since ETV broadcasts or distribution services can act as links between different college and universities. Brief mention will also be made of higher education associations interested in promoting inter-institutional cooperation and of some broad studies now underway on total communications and information systems which could be utilized inter-institutionally by higher education. And finally, a short review will be made of selected projects and experiments which have been conducted in inter-institutional televised instruction in order to permit some comment on the potential and perils of such atypical academic behavior in the higher education community.

ETV Network Development

The ability of radio to reach out to many people and to bring them entertaining and informational programs was greatly enlarged and enhanced with the introduction of regional and national network broadcasting during the late 1920's and early 1930's. The principle of network broadcasting, then, was firmly established and readily accepted when television made its debut on the American broadcasting scene in the 1940's. The public has warmly accepted and acclaimed this ability of radio and television to distribute top-level entertainment and information from cultural, talent and news centers throughout the United States. Today, as a matter of fact, major attention and audiences are usually given to network as opposed to local programming fare.

Many of those people who have had interest in the potential of educational broadcasting have also felt that the development of educational network broadcasting

would enhance the value of its efforts. The ability of television particularly to visit, record and comment upon cultural offerings of galleries, museums, libraries and to present the fine art of music, dance and theatre, can certainly bring artistic experiences to the general public which might not otherwise be available. And, the potential of television for capturing and distributing the ideas of some of the great men of our time, or for recording and distributing the thoughts and inspiration of some of the outstanding teachers, has persistently challenged the hope and imagination of many educational administrators and of most educational television practitioners.

In spite of the realization of the merits of network interconnection which would permit simultaneous distribution of informational and cultural programs, its development has been slow and rather meagre as far as educational broadcasting is concerned. In some measure, this has been due to lack of finances. Interconnection of stations and institutions has also been held back by a certain provincial pride reflected in a "we-can-do-it-as-well-locally" attitude. This has been coupled with some latent fear or concern for importing talent and ideas from other areas and institutions somewhat outside of local educational control and spheres of influence. Since the network concept of broadcasting has implications for inter-institutional interconnection, a review of the nature and extent of network activity will be helpful.

Network development among educational broadcasters did not manage to produce many instances of simultaneous interconnection of either educational stations or institutions during its earlier days. The pattern of "networking" which developed was mainly one of recording and mailing of programs. In radio, the National Association of Educational Broadcasters, with the help of a Foundation Grant, established a

Tape Network for educational radio stations in 1950. Essentially, the NAEB Tape Network obtains quality program series on "master" tapes from member stations or from other national or international sources. Tapes are dubbed from the "master" at headquarters and program service packages are made available by mail to member educational radio stations in order to supplement or enhance local program scheduling. For many years, Wisconsin has operated a radio network facility throughout the state but few other examples of simultaneous interconnection of educational radio stations can be cited.

In television, the National Educational Television and Radio Center (now NET), with the assistance of a Foundation grant, was established in the early 1950's. In 1954 it initiated a film and kinescope "network" service for educational television stations. NET contracts with ETV stations and with professional production companies to acquire educational and cultural program series of national worth and interest. This service now utilizes video tape recordings and distributes by mail its offerings to most ETV stations in the nation. To demonstrate the value of live, simultaneous network broadcasting, however, NET has plans for a limited round-robin interconnection system which it hopes to initiate in 1967. Lines for this service will be leased from the telephone company.

Other program services have appeared more recently. The National Center for School and College Television in Bloomington, Indiana and the Great Plains Instructional Television Library in Lincoln, Nebraska provide recorded instructional programs and materials on a national basis to television stations and to closed-circuit installations. ETS Program Service in Bloomington, Indiana obtains recorded programs produced by ETV stations across the country which are available to affiliates of the Educational Television Stations Division of NAEB. The Eastern Educational Network in Cambridge, Massachusetts makes programs available to its 14 station affiliates as does Midwest Educational Television in St. Paul, Minnesota to its member ETV stations

in the Upper Midwest.

These program or "network" services have mostly been developed to give supplemental program service to a number of individual ETV stations rather than to tie stations together through interconnection. Perhaps this kind of service has been dominant because ETV stations have tended to develop in isolation, with the support of some specific institution or school system or community group, rather than as part of a statewide or network plan. Alabama, Oklahoma and Oregon did develop their ETV stations with interconnection as an initial part of their plans and have programmed broadcasting with some "network concept" in mind. More recently, states have been developing plans for linking present ETV stations and for statewide interconnection of future ETV facilities. A recent letter from Dr. Lawrence T. Frymire, ETV Coordinator for the State of California and the Chairman of the State ETV Authority Associates' group with the NAEB, states that:

> "A review of the current ETV situation reveals that states that now have interconnected services between one or more ETV stations are: Maine (4), Oklahoma (3), North Carolina (3), Alabama (6), Georgia (6), California (3), Oregon (2), Utah (17 translator stations plus KUED-TV), South Carolina (3 plus statewide CCTV system), Nebraska (4), Minnesota (3), and Texas (TEMP). States which have recently passed legislation, with appropriations, for statewide systems now being developed are: Kentucky, South Dakota, Maryland, Vermont, Tennessee, Hawaii, Mississippi, and Delaware (CCTV). States which do not have statewide interconnection but which have what I judge to be well-coordinated and effective programs of state support resulting in various forms of statewide ETV services (partial microwave interconnection, central purchasing, or planned program development and distribution, etc.) are: Florida, Arkansas, Pennsylvania, Texas, New York, California, Virginia, Ohio, New Mexico, West Virginia and Illinois."

So, after a dozen years of debate and planning and development, more than half of the states are either operating or have specific plans for developing some form of ETV network activity.

Interconnection facilities have been introduced in various regions for different

purposes. In Oregon, open-circuit ETV facilities were developed to reach out to several campuses of the State System of Higher Education to experiment with the feasibility of inter-institutional instruction of university level courses. While in Texas, closed-circuit television facilities were developed to interconnect eleven institutions of higher education to make available telecourses to each campus.

In Florida, the legislature established an Educational TV Commission with the intent that it utilize state educational resources through television for upgrading junior college instruction. The interconnection of open-circuit ETV facilities and the use of translator and cable systems in the state of Washington were developed primarily to extend instructional services to the public schools (rather than to higher education). The development of an extensive state-wide closed-circuit television network in South Carolina (utilizing services leased from Southern Bell Telephone Company) was initiated mainly to reach into the secondary school systems in every county in the state. Initial interconnection of open-circuit ETV stations of the Eastern Educational Network (EEN) was accomplished, in large measure, to extend the wealth of programs from Boston's station, WGBH-TV to areas in Maine, New Hampshire and New York.

Although it cannot be considered a network facility as such, another unique experiment in "extending" instruction through television broadcast is the Midwest Program on Airborne Television Instruction (MPATI). This project broadcasts educational courses (from an airplane flying at a high altitude over north-central Indiana) which are received on television sets in classrooms of participating primary and secondary schools over a 150 to 200 mile area encompassing parts of six states. The television courses are recorded and played back on video tape over two broadcast channels on a prearranged schedule throughout the week.

A number of school systems and a few universities have installed Instructional

Television Fixed Service Systems, on the 2500 megacycle band, to interconnect schools or buildings on a point-to-point broadcast basis. Undoubtedly, this special interconnection service will be further utilized by educational systems in the future.

It is apparent, then, that different regions, states, or educational systems have developed several kinds of television interconnection facilities for educational purposes and that they have done so for a variety of reasons. No common pattern of development can be claimed other than an attempt to extend certain educational and cultural offerings over a wide area in the hope that these programs could improve and expand opportunities for students at different educational levels and for adult citizens in the general community who might find the programs of educational and enrichment value.

As a further extension of potential "network" development, The Ford Foundation recently announced its interest in a national communications' satellite facility which would interconnect commercial, as well as educational, television stations and would produce revenue for proper support and development of non-commercial, educational television services. The Foundation has filed its plan with the Federal Communications Commission and there has been much comment on its relative merits by spokesmen of the national television networks, by broadcasters, legislators, and others with vested interests in network interconnection of television stations.

Comsat (the Communications Satellite Corporation established by Congress in 1962 as a commercial corporation to establish and operate a worldwide communications system) has developed an alternate plan to the one suggested by The Ford Foundation and has submitted it to the Carnegie-Corporation-supported Commission on Educational Television. The Carnegie group was established last year to undertake an intensive

study of the present problems of educational television and to make recommendations for its future. The Commission is expected to submit its report in late 1966.

Several Congressmen have expressed an interest in these plans and it is entirely possible that some legislative action will be taken within the next year to achieve interconnection of ETV broadcast stations.

This review of developments in the interchange of services and the interconnection of schools or stations by television will indicate the increased interest and activity in utilizing such facilities for informational and educational purposes and their potential in the broad academic community. With this much progress, then, it almost goes without saying that even greater developments of television interconnection will be realized in the near future.

Related Information on Inter-institutional Cooperation and Communication

In addition to the above-outlined developments of interchange of information and education by television, there have been other attempts at regional cooperation through the work of organizations or through special studies in communication.

The Southern Regional Education Board (SREB) has a compact among 18 southern states and engages in a full range of cooperative programs and projects. Educational television has been studied as a cooperative venture. The Western Interstate Council for Higher Education (WICHE), which is a compact of the western states, has given attention to television as an interconnecting, cooperative instructional device, along with many other projects and programs which it has studied or developed in interstate cooperation. And, the Committee on Institutional Cooperation of the Big Ten, to mention but one other group, is actively functioning to study possibilities for inter-institutional cooperation.

Other studies, which do not deal with television exclusively, are concerned with the potential of all communications systems as information and instructional links

between institutions. The Educational Communications System (ECS) study, which is now in progress under the auspices of the United States Office of Education, entails three regional pilot studies which are trying to determine purposes and needs for inter-institutional communications and facilities necessary to fulfill communication demands in administrative, instructional, library and research operations. Utilization of telephone, teletype, television, facsimile, etc. is all being considered.

Another project which seems to be gaining momentum is under the aegis of the Interuniversity Communications Council (EDUCOM). This group is working to encourage the development of nationwide information-processing and distribution activities which will include inter-institutional sharing of materials through communications interconnection. The use of computers in communication, in programmed instruction, and in the automation of libraries is urged as well as the optimum utilization of all audio-visual communicative aids to improve the distribution and interchange of instructional information. This past summer an EDUCOM Task Force on Information Networks held a several week meeting at the University of Colorado. One hundred and eighty-one participants from universities, government, industry and private foundations met to discuss the potential of an inter-institutional information network and to consider means by which such a network might become a reality. EDUCOM will publish a report on this conference soon.

A number of universities are active in the EDUCOM discussions and the feelings of some representatives seem to be captured by Dr. E. L. Boyer, executive dean for University-wide programs in the State of New York, who says of the EDUCOM development:

> ". . .we are convinced that the solution to the problems of increased size and expanding knowledge is tied to the development of a network which will fit together all of our communications needs into a coherent structure.
>
> The bibliographic knowledge, the demonstration recorded on video tape, the rare manuscript, the intellectual interaction of outstanding professors, must some day be transmitted rapidly and effectively throughout the whole system. It is to this end that the energies of the State University of New York are now directed. . ."

Perhaps all universities in the future will consider such inter-institutional information networks as necessary as they consider the central campus library today.

Inter-institutional Television Utilization

The variety and extent of use of television networks make it obvious that, from an engineering and technical point of view, no basic problems exist which need legislate against the use of television as a means of interconnecting educational institutions to distribute instructional material. It is technically feasible to use either open-circuit or closed-circuit television to reach students in separate school systems or in colleges and universities which are geographically separated from one another.

The question becomes, then, whether it is administratively feasible and operationally desirable to establish television interconnection between institutions of education--and, for the purposes of this paper, between institutions of higher education. What do institutions of higher education, separated geographically from one another, have to interchange with each other? And, how effectively can television contribute to this interchange?

From an instructional point-of-view, it might seem logical that certain basic, common courses could be shared by presenting them simultaneously to several institutions. Or, special course offerings of certain institutions could be distributed by television to enrich the curricula of other institutions. Perhaps, distinguished professors could give seminars for both faculty and advanced students on various campuses. Television interconnection facilities could also be used to send needed information between libraries, galleries, museums, etc. which could contribute to both the instructional and the research aspect of academic life.

Coverage of special events such as lectures, concerts, exhibits could extend and enhance their benefits for the academic community. Various political, artistic and athletic events from a single campus could be distributed by television to any number of interconnected institutions.

Administratively, institutional executives could find television useful for inter-institutional conferences. Faculty members might utilize inter-connection to conduct seminars or exchange special information.

Other uses might be itemized but these are enough to establish the potential of television as an inter-institutional communication's tool. But whether the potential of television can be utilized properly and practically on an inter-institutional basis to solve problems or to satisfy institutional needs is a question which has no single, simple answer. Some tentative agreement on purpose and need for television must be established by the administration, and by a reasonable proportion of the faculty, if television is to be utilized. To theorize that television's ability to magnify, multiply and distribute information should improve instruction, enrich the curriculum, extend educational opportunities, effect economies (in staff, time and talent), does not necessarily mean that any of these things will happen if a television interconnection system is introduced.

Any innovation in education, quite properly, is met with resistance and questioning concern by some educators. And the college professor would seem to be in the forefront in resisting change in instruction and classroom conduct. The introduction of television as an educational tool disrupts the status quo and, consequently, meets with resistance. Couple the introduction of inter-university television instruction with the need for inter-institutional cooperation between the different institutions of higher education, which in itself is very much in the innovative and experimental stage of development, and the issue is compounded even more. Most colleges and universities are still living in the sunshine or shadow of

their own rugged, individualistic glory. In the past, most academic administrators have worked diligently to build up fierce loyalties to individual institutions so that students, faculty, alumni, donors, legislators, et al, will react and root for "old Siwash U", whatever and wherever it might be. Traditional rivalries have been encouraged in excellence of staff, in student achievement, in specialized curricula, in athletics and other areas. The competition for money, as well as all manner of things academic, has been lively and often has resulted in strong unilateral action of administrators, faculty and student members of individual institutions rather than any attempt to seek friendly cooperation among the colleges and universities located in a certain state or region. The introduction of television for use on an inter-institutional basis is closely related to the problems of any inter-institutional program which requires complete cooperation and acceptance by several institutionally dominated communities that have essentially been indoctrinated to operate on a loyally independent basis. There are factors, then, of institutional prestige, administrative forebodings, faculty ego, and student loyalty which complicate the development of any wide utilization and acceptance of any inter-institutional program, let alone an inter-institutional instructional television program.

This does not mean that such a program cannot be realized. In Oregon, an experiment in inter-institutional television teaching was successfully conducted from 1957 to 1965 on open-circuit broadcast over the states' educational television stations. The fact that several institutions of the Oregon State System of Higher Education participated in the project for eight years would indicate the technical and administrative feasibility of such an enterprise. It should be stressed, however, that continued participation in the project was accomplished by closely involving faculty committees on the several campuses in the project and by constant contact and friendly persuasion on the part of the project director with the teaching, administrative and committee personnel on the different campuses involved. When

inter-institutional television instruction was left to carry on without any special pleading, however, it lingered for only a few years and now has essentially been dropped in favor of conventional classroom instruction or in favor of closed-circuit television on individual campuses.

The Oregon experiment in inter-institutional television proved beyond doubt the operational feasibility of such a program. It introduced television teaching at the college level in Oregon and gained acceptance as a viable method of instruction. Although faculty interest and opinion would indicate no need for inter-institutional television instruction in Oregon at this time, individual institutions are continuing closed-circuit telecourses, and the state's educational television stations broadcast a limited number of telecourses as a part of their continuing education program. Television, then, seems to have established itself in Oregon as an educational tool and there are a number of administrators who feel that future need or development will call again upon inter-institutional use of the medium in Oregon.

Another experiment with inter-institutional instruction at the higher education level has been conducted in Texas where eleven public and private colleges and universities have been interconnected by closed-circuit microwave facilities. This is known as the Texas Educational Microwave Project (TEMP) and has been distributing college telecourses to member institutions since 1959.

The project has experienced a number of problems in communications and inter-personal relations, along with some complaint of too much dominance from the University of Texas in Austin. These factors, coupled with excessive administrative pressure and control during the first several years of TEMP's existence created enough problems to bring the project close to disbandment. During the last two years however, a new organization has been developed in which the campus faculty committees are given as much power as possible in determining use, course offerings and

evaluation. This has brought an improvement in faculty attitude toward the program. As in the Oregon project though, acceptance of telecourses has been on a token and experimental basis rather than with enthusiastic approval for extended use. Four TEMP courses are currently being telecast for utilization inter-institutionally. The present director is hopeful that some increased financing and more faculty participation will bring better programs and wider acceptance for the future.

In Florida, the state legislature in 1956 established an ETV Commission to develop television with the express purpose of utilizing state resources to upgrade junior college instruction. Original plans anticipated microwave interconnection of ETV stations into a state network. This has not happened, however, and television instructional material has been made available in different areas by distribution of tape-recorded telecourses.

The early development of telecourses, mostly by the University of Florida, for junior college use was resented by administration and faculty of the older, established junior colleges. They felt that their instructional efforts were being downgraded and that they were being identified as poor academic relations to the University. The new emerging junior colleges were more willing to utilize the telecourses as they provided competent instruction in areas not otherwise available to the colleges. As the new institutions have gained in enrollment and staff competency, however, they have tended to reduce their use of telecourse offerings.

Although all junior colleges can receive instructional television service from educational television stations supported by the Florida ETV Commission without any cost of the colleges, limited acceptance of telecourses seems to be the pattern. The fact that almost all of the thirty junior colleges in Florida use some television in instruction, however, is indication of some success in development and utilization of television as a teaching tool. The fact that it isn't used more extensively would

indicate that it does not fulfill needs as well as anticipated, and that there exists certain factors of resistance in importing instruction as opposed to originating it on a local basis.

This brief review of utilization of inter-institutional television for instruction in Oregon, Texas and Florida obviously does not do justice to the programs developed there. It may serve, however, as specific indication that instructional television can be used to reach different institutions of higher education either by open-circuit broadcast or by closed-circuit transmission or by distribution of video tape recordings for single campus closed-circuit use as well as for rebroadcast reception in local areas. It also suggests that these accomplishments are precarious in nature. Inter-institutional television instruction has not been warmly accepted by faculties at various participating institutions. There has been limited acceptance, some strong resistance and rather widespread apathy toward its use.

This knowledge might be discouraging to others who harbor plans for television interconnection among institutions. It should not be. The expanding problems in enrollments, in curricular development, in physical plant expansion, in equipment needs, in securing and maintaining and utilizing qualified academic staff demand that experimentation be continued in a search for solutions to these problems. Plans must be made as much for the needs and demands of the future as for those of today. Logic would indicate that television has great potential for use on an inter-institutional basis and attempts toward cooperative educational effort should be sought among institutions of higher education. It would be profitable, therefore, for more systems of higher education to explore the use of television inter-institutionally. There is need for experiment with different models, different methods in seeking optimum use of television interconnection and networking for higher education.

If lessons can be learned from those instances where an inter-institutional television program has been developed for instruction, serious consideration should be given to the following factors when embarking upon such an enterprise.

1. Clearly defined purposes for the program must be developed and agreed upon by administration and by faculty.

2. Assurance of strong and continuing administrative support by institutional executives, but without arbitrary edicts and pressure on faculty to participate, is necessary.

3. Establishment and effective operation of strong, respected faculty committees on each campus is essential for proper planning, acceptance and control of the program.

4. Appointment of an effective, affable, respected coordinator of the program on an inter-institutional level is desirable. He must be able to organize, arbitrate and articulate the program and he must be able to communicate and to keep information channels open for all concerned.

5. Care must be exercised in working out an acceptable formula for choice of television courses and of teachers, and in avoiding any condescending, "Big Brother" attitude on the part of larger, more prestigious institutions.

6. Concern should be shown for teacher's rights. A policy should be developed regarding the role of the television professor, released time, video-tape recording of lectures or demonstrations, reuse of tapes and residual rights—and all of this made most evident to all participating faculty.

7. Concern should be shown for student attitudes and for proper announcement and explanation of an inter-institutional program. Seek willing acceptance from students, although evidence would indicate that the best way to gain student approval is to offer superior quality in instruction.

8. A well-designed program of research and evaluation can be of great value at this stage of wonder and disagreement over the relative merits of using television for educational purposes.

9. And, finally, it is most important that any venture in inter-institutional utilization of television receive optimum financial support to permit acquisition of the best personnel and materials for high quality production and reception of programs. The use of television as an instructional aid is no better than the talent and tools employed to manufacture the product.

Thus, educational systems or regions which desire to introduce inter-institutional television should attempt a clear articulation of the purposes and guidelines for

its use as well as making a firm commitment to an appropriate development of facilities and staff in development and actuation of its program. The successful utilization of television as an inter-institutional instructional or informational tool will depend upon its acceptance by institutional administration, faculty and students. Although television has received great acceptance as a medium for distributing information and entertainment, it has received very limited endorsement and acceptance as a distributor of knowledge and instruction at the higher education level.

A wide range of factors accounts for this lack of acceptance, including the honest, conscientious, inquiring, skeptical attitude of many established faculty members toward this electronic innovation and its limitations as an instructional device. A great deal of the resistance, however, seems to be accounted for by general apathy and resistance to change coupled with the fact that television has often become the "critic" of conventional teaching processes by revealing that the teaching that goes on behind the closed doors of self-contained classrooms is often not as inspired and exciting as supposed. The attempts to use television on an inter-institutional level has played a critical role also in spotlighting the fact that there is very little real desire to consider the sharing of curriculum, faculty and facilities among institutions lest such cooperative sharing might somehow legislate against some single institution's status and integrity.

Much more experimental evidence will have to be gathered and distributed regarding the potential of television as an instrument of inter-institutional instruction before its true place and value is determined in higher education.